

Appl. No. 09/297,483
Amdt. Dated April 29, 2004
Reply to Final Office Action of February 20, 2004

Attorney Docket No. 81756.0003
Customer No. 26021

REMARKS/ARGUMENTS

This application has been carefully reviewed in light of the Office Action dated September 16, 2003. Claims 37-49, 51, 53, 54, 62, 64, 66, 83-97 and 113-128 remain in this application. Claims 37, 62 and 113 are the independent claims. Claims 37, 62 and 113 have been amended. It is believed that no new matter is involved in the amendments or arguments presented herein. Reconsideration and entrance of the amendment in the application are respectfully requested.

Art Based Rejections

Claims 113-127 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,701,055 (Nagayama); Claims 37-49, 51, 53, 62, 64, 66, 83-96 and 113-127 were rejected under § 103(a) over Nagayama in view of U.S. Patent No. 6,169,163 (Woo) and further in view of U.S. Patent No. 5,766,515 (Jonas), U.S. Patent No. 5,667, 572 (Taniguchi) and U.S. Patent No. 5,972,419 (Roitman); Claims 54, 97 and 128 were rejected under § 103(a) over Nagayama in view of Woo, and further in view of Jonas, Taniguchi, Rotiman, and U.S. Patent No. 6,004,483 (Jonas II). Applicant respectfully traverses the rejections and submits that the claims herein are patentable in light of the clarifying amendments above and the arguments below.

The Nagayama Reference

The Nagayama reference is directed to a full color display device comprising a matrix of EL elements (*See, Nagayama, abstract; Col. 1, lines 16-18*). According to Nagayama, the insulation ramparts 7 are placed over the anode layer without partitioning the anode layers (*See, Nagayama, Fig. 5C and Figs. 8A-8C, Col. 7, lines 38-56; Col. 8, lines 41 to Col. 9, line 9*).

Appl. No. 09/297,483
Amdt. Dated April 29, 2004
Reply to Final Office Action of February 20, 2004

Attorney Docket No. 81756.0003
Customer No. 26021

The Woo Reference

The ancillary Woo reference is directed to oligomers and polymers of fluorene compounds and films and coatings prepared from such fluorenes, oligomers and polymers (*See Woo, Col. 1, lines 19-21*).

The Jonas Reference

The ancillary Jonas reference is directed to certain material to be used in production of transparent electrodes such as LCD's (*See, Jonas, abstract; Col. 1, lines 5-15*).

The Taniguchi Reference

The ancillary Taniguchi reference is directed to an ink composition for use in print. According to Taniguchi, the ink composition comprises: a colorant which is either sparingly soluble or insoluble in water; a water-soluble organic solvent capable of dissolving the colorant; a saccharide and/or polyvinyl pyrrolidone; and water (*See, Taniguchi, abstract; Col. 1, lines 6-9*).

The Roitman Reference

The ancillary Roitman reference is directed to display devices, and to displays utilizing polymer-based electroluminescent devices. Roitman teaches depositing multiple colors of electroluminescent materials between barriers using ink-jet printing (*See, Roitman, abstract; Col. 3, lines 1-50*).

The Jonas II Reference

The ancillary Jonas II reference is directed to the field of conductive coating and the production of such coatings by simple application techniques. (*See, Jonas II, abstract; Col. 1, lines 5-17*).

Appl. No. 09/297,483
Amdt. Dated April 29, 2004
Reply to Final Office Action of February 20, 2004

Attorney Docket No. 81756.0003
Customer No. 26021

The Claims are Patentable Over the Cited References

The present application is generally directed to methods of manufacturing an organic EL (electroluminescence) element and a composition for use as a hole injecting and transporting layer suitable for ink jet patterning.

As defined by independent claims 37, 62, and 113, a method for manufacturing an organic EL element includes forming a plurality of anode layers. The partitioning member is formed over a substrate and lies at least between adjacent ones of the plurality of anode layers so as to independently partition the adjacent ones of the plurality of anode layers. A plurality of openings are formed over at least a portion of an anode layer, the openings corresponding to the pixel areas. The partitioning member contacts the substrate. A hole injecting or transporting layer is formed by independently filling each of the openings with a composition for the hole injecting or transporting layer using an ink-jet head. The composition includes (1) a conductive material containing at least a lubricant, polyethylene dioxythiophene, and polystyrene sulfonic acid, and (2) a solvent. The composition filled in the openings is dried to form the hole injecting or transporting layer. Each of the openings is independently filled with a light-emitting layer composition over the hole injecting or transporting layer using an ink-jet head to form the light-emitting layer. The height of the hole injecting or transporting layer and the light-emitting layer is less than that of the partitioning member. A cathode layer is formed over the light-emitting layer.

Independent Claims 37, 62 and 113

The applied art of the record is not seen to disclose or suggest the claimed features of the present invention. In particular, the cited references are not seen to disclose or suggest "the partitioning member lying at least between adjacent ones of

Appl. No. 09/297,483
Amdt. Dated April 29, 2004
Reply to Final Office Action of February 20, 2004

Attorney Docket No. 81756.0003
Customer No. 26021

the plurality of anode layers so as to independently partition the adjacent ones of the plurality of anode layers, whereby a plurality of openings are formed over at least a portion of an anode layer... and wherein the partitioning member contacts the substrate,” as required by the claims of the present invention.

Nagayama, cited by the Office Action, is directed to a full color display device comprising a matrix of EL elements (*See, Nagayama, abstract; Col. 1, lines 16-18*). As is clear from the drawings, the insulation rampart 7 disclosed in Nagayama does not partition the anode layers 3 so as to form an opening over the anode layers 3 (*See, Nagayama, Fig. 5C and Figs. 8A-8C; Col. 7, lines 38-56; Col. 8, line 42 to Col. 9, line 9*). In contrast, the present invention requires that “the partitioning member lying at least between adjacent ones of the plurality of anode layers so as to independently partition the adjacent ones of the plurality of anode layers, whereby a plurality of openings are formed over at least a portion of an anode layer... and wherein the partitioning member contacts the substrate.”

The Office Action cites Figure 19 and Col. 13, line 49 to Col. 14, line 6 of Nagayama as teaching that “supporting walls may run parallel to and between both the anodes and cathodes.” Applicant respectfully submit that the cited Figure and portions of the reference merely disclose that the insulative layer is formed on the surface of the substrate other than the exposed portions 50 of the first display electrode and the edge portions 60 of the first display electrodes. However, the cited figure and portions do not disclose “the partitioning member lying at least between adjacent ones of the plurality of anode layers so as to independently partition the adjacent ones of the plurality of anode layers, whereby a plurality of openings are formed over at least a portion of an anode layer... and wherein the partitioning member contacts the substrate,” as required by the claims of the present invention.

Appl. No. 09/297,483
Amdt. Dated April 29, 2004
Reply to Final Office Action of February 20, 2004

Attorney Docket No. 81756.0003
Customer No. 26021

The ancillary Woo, Jonas, Taniguchi, Roitman and Jonas references are not seen to remedy the deficiencies of Nagayama since none of those references, alone or in combination, disclose or suggest the elements of the claimed invention, namely, "forming an anode layer on a substrate, the partitioning member lying at least between adjacent ones of the plurality of anode layers so as to independently partition the adjacent ones of the plurality of anode layers, whereby a plurality of openings are formed over at least a portion of an anode layer... and wherein the partitioning member contacts the substrate."

The Office Action concedes that none of the cited references teach or suggest the above combination of features of the present invention, but nonetheless observes that the above combination "would have been obvious" to one of ordinary skill in the art. Applicants respectfully traverse this basis for the rejections.

Under MPEP §2143, to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations." Moreover, "the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure." *Id.* (citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

As MPEP §2143.01 makes clear, *"the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination."* *Id.* (citing *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)). It is respectfully suggested that none of the cited references suggest the combination of

Appl. No. 09/297,483
Amdt. Dated April 29, 2004
Reply to Final Office Action of February 20, 2004

Attorney Docket No. 81756.0003
Customer No. 26021

the above references. Moreover, none of the cited references contain a suggestion as to a reasonable expectation of success of any such combination.

Applicant respectfully submits that the finding of obviousness in this case is based on nothing more than the invention of the present application, and is thus improper.

In accordance with 37 C.F.R. § 1.104 (d)(2) and to preserve Applicant's argument on appeal, Applicant requests that the Examiner provide an affidavit that supports the rejection of the claims based on the official notice, common knowledge, or personal knowledge of the Examiner. See *In re Lee*, 277 F.3d 1338, 1344-45, 61 U.S.P.Q.2d 1430, 1435 (Fed. Cir. 2002) (finding that reliance on "common knowledge and common sense" did not fulfill the PTO's obligation to cite references to support its conclusions as PTO must document its reasonings on the record to allow accountability and effective appellate review).

Since the cited reference fails to disclose, teach or suggest the above features recited in the claims of the present invention, these references cannot be said to anticipate nor render obvious the invention which is the subject matter of those claims.

Accordingly, amended independent Claims 37, 62 and 113 are believed to be in condition for allowance and such allowance is respectfully requested.

Dependent Claims 114-120

According to page 5 of the Office Action,

The discussion of contact angles, viscosity and surface tension each discuss only the features of the process of ink-jet printing and not the features of an EL device

Applicant respectfully disagrees with this conclusion. Pages 5-9 of the Application discuss in detail the effect of the optimization of the contact angel,

Appl. No. 09/297,483
Amdt. Dated April 29, 2004
Reply to Final Office Action of February 20, 2004

Attorney Docket No. 81756.0003
Customer No. 26021

viscosity and surface tension, on the physical properties of the formed EL product. As clearly stated on page 11, lines 15-16 of the present application, "by establishing the film thickness and the film resistance of the hole injecting and transporting layer within the preceding ranges, *the light emission characteristics of the organic EL element can be improved.*

Applicant therefore respectfully submits that the parameters of contact angles, viscosity and surface tension *do concern* the features of an EL device. Accordingly, dependent claims 114-120 are believed to be in condition for allowance and such allowance is respectfully requested

The remaining claims, not discussed here, depend either directly or indirectly from amended independent claims 37, 62 and 113, and recite additional features of the invention which, when taken as a whole, are neither disclosed nor fairly suggested by the applied references and are therefore also believed to be in condition for allowance.

Conclusion

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (213) 337-6809 to discuss the steps necessary for placing the application in condition for allowance.

Appl. No. 09/297,483
Amdt. Dated April 29, 2004
Reply to Final Office Action of February 20, 2004

Attorney Docket No. 81756.0003
Customer No. 26021

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,
HOGAN & HARTSON L.L.P.

Date: April 29, 2004

By



Dariush G. Adli
Registration No. 51,386
Attorney for Applicant(s)

500 South Grand Avenue, Suite 1900
Los Angeles, California 90071
Phone: 213-337-6700
Fax: 213-337-6701